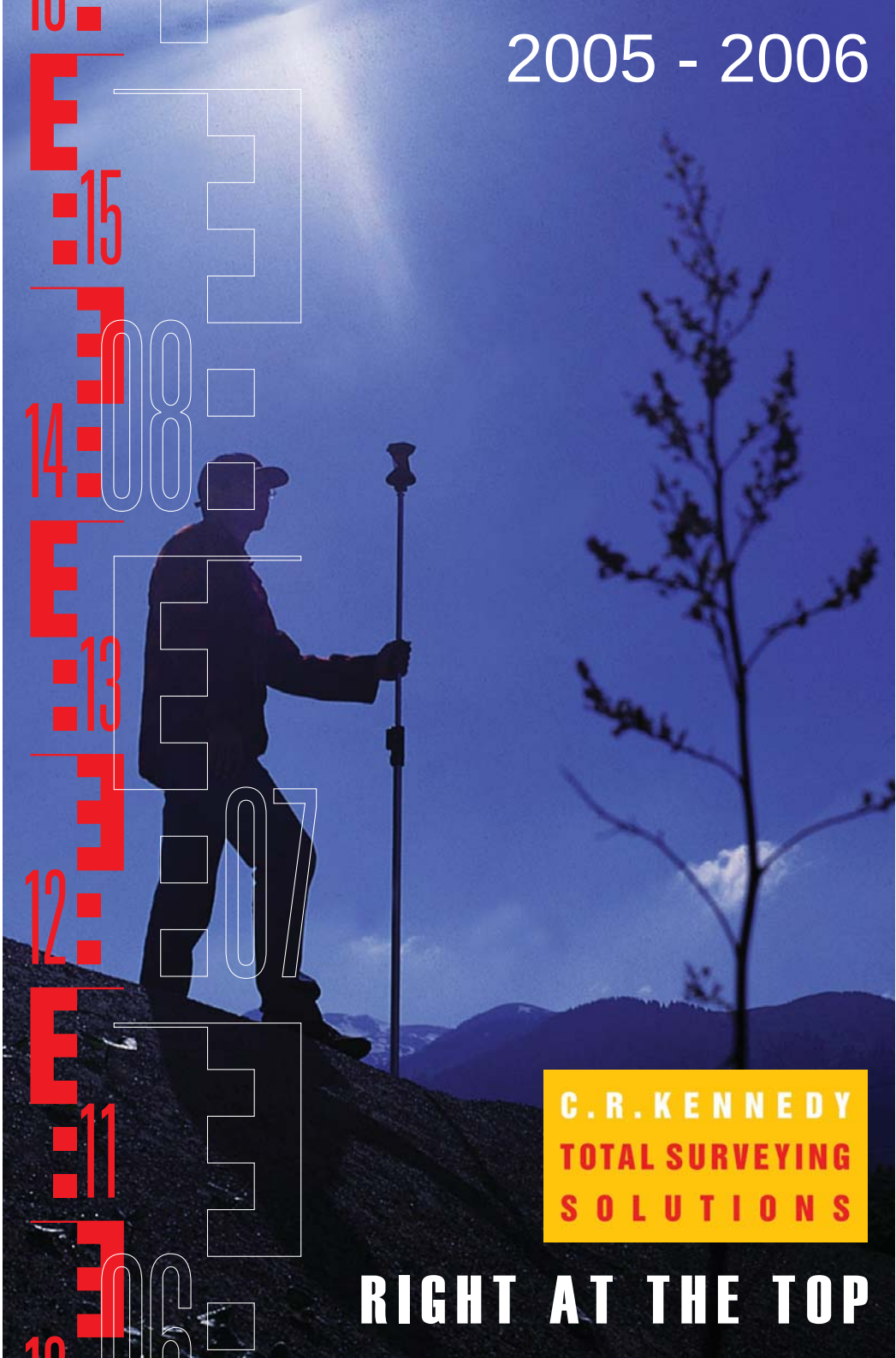

2005 - 2006
C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS
RIGHT AT THE TOP

Foreword

Welcome to the 2005/2006 CR Kennedy Surveying & Construction equipment catalogue.

The last twelve months have again seen some major technological initiatives from Leica GeoSystems.

We are pleased to present-:

- New series 1200 Total Stations and GPS which allow full data transfer between the instruments – our X Factor
- New SmartStation, a world first incorporating GPS into the Total Station
- New Sprinter digital levels
- New Rugby 300/400 series grade lasers
- New HDS 4500 Hi Speed 3D laser scanners
- New Rail and Underground Systems
- New Machine Automation for graders and excavators

From Optech in Canada the new wireless Cavity Monitoring System has been widely accepted in the Australian market which leads the world in the use of these stope scanning devices.

Our construction equipment basket has been further enhanced by many new and innovative models from Robotoolz.

CR Kennedy aims to be the “total solution” provider. The products listed in this catalogue have been carefully chosen to represent the highest quality in the industry.

We have also strengthened our customer service capabilities in many states, opened a new office facility in Sydney and established our business in New Zealand.

We hope you enjoy our new catalogue and we look forward to being of service to you…

Stephen Beard
Director

TABLE OF CONTENTS

TOTAL STATIONS & THEODOLITES	4-5
LEICA SMARTSTATION	6-7
LEICA GPS	8-9
SURVEY SOFTWARE	10-11
LEICA SURVEY ACCESSORIES	12-13
CST SURVEY ACCESSORIES	14-15
MACHINE AUTOMATION	16-17
LEICA GRADESTAR	18-19
LEICA MC 200	20
MIKROFYN MIKRODIGGER	21
LEICA HDS SURVEYING	22
RIEGL SCANNER	23
OPTECH CMS SCANNER	24
LEICA TMS PROFILE MEASURING	25
DISTO	26-27
LEICA GPR3000 RAIL SYSTEM	28-29
LEICA LASER LEVELS	30-31
MIKROFYN LASER LEVELS	32-33
ROBOTOOLZ LASER LEVELS	34-35
OPTICAL & DIGITAL LEVELS	36-37
TRIPODS	38-39
LEICA DIGICAT	40
PENTAX BINOCULARS	41
TAJIMA PRODUCTS	42-43
GENERAL PRODUCTS	44-49
CRK SERVICES	50-51

*The item codes displayed are C.R. Kennedy codes and are not necessarily the codes used by the manufacturer. The items displayed in this catalogue are a cross section of available goods and are not our entire product range.

Total Stations & Theodolites

TCR110

TCRP1200

TCR400

TCR800

LEICA 1200 plus Professional Series

Total Station

Angular acc.	1 sec, 2 sec, 3 sec or 5 sec.
Measuring acc.	2mm + 2ppm.
	3mm + 2ppm no prism.
Range	7.5km. 100m or 300m, no prism.
Recording	Flash card, RS232 interface.
Magnification	30 x.

The **RX1220T remote control** is a compact handheld controller that enables a one person total station operation. The controller combines the radio modem, and battery into a compact, hand held unit. The result is a One-person total station, controlled from the target point itself or from any other desired position.

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

LEICA TCR110 Total Station

Angular acc.	10 sec (5mm@ 100m)
Measuring acc.	5mm + 3ppm
Range	500m. 80m no prism
Magnification	30 x
Plummet	Laser

LEICA T110 Theodolite

Resolution	10 seconds.
Magnification	30 x.
Angular acc.	10 seconds.
Min display	10”/5”/1” selectable.
Laser plummet	Located in the base.

LEICA 400 Basic Series Total Station

Angular acc.	3 sec, 5 sec or 7 sec
Measuring acc.	2 mm, + 2ppm
Range	3.5km. 80m no prism
Memory	10,000 points, RS232
Magnification	30 x
Plummet	Laser

PENTAX ETH 320 Theodolite

Resolution	20 seconds.
Magnification	30 x.
Power supply	5 x AA Batt.
Operation	15 hrs.
Plummet	In Base, 2 x mag.

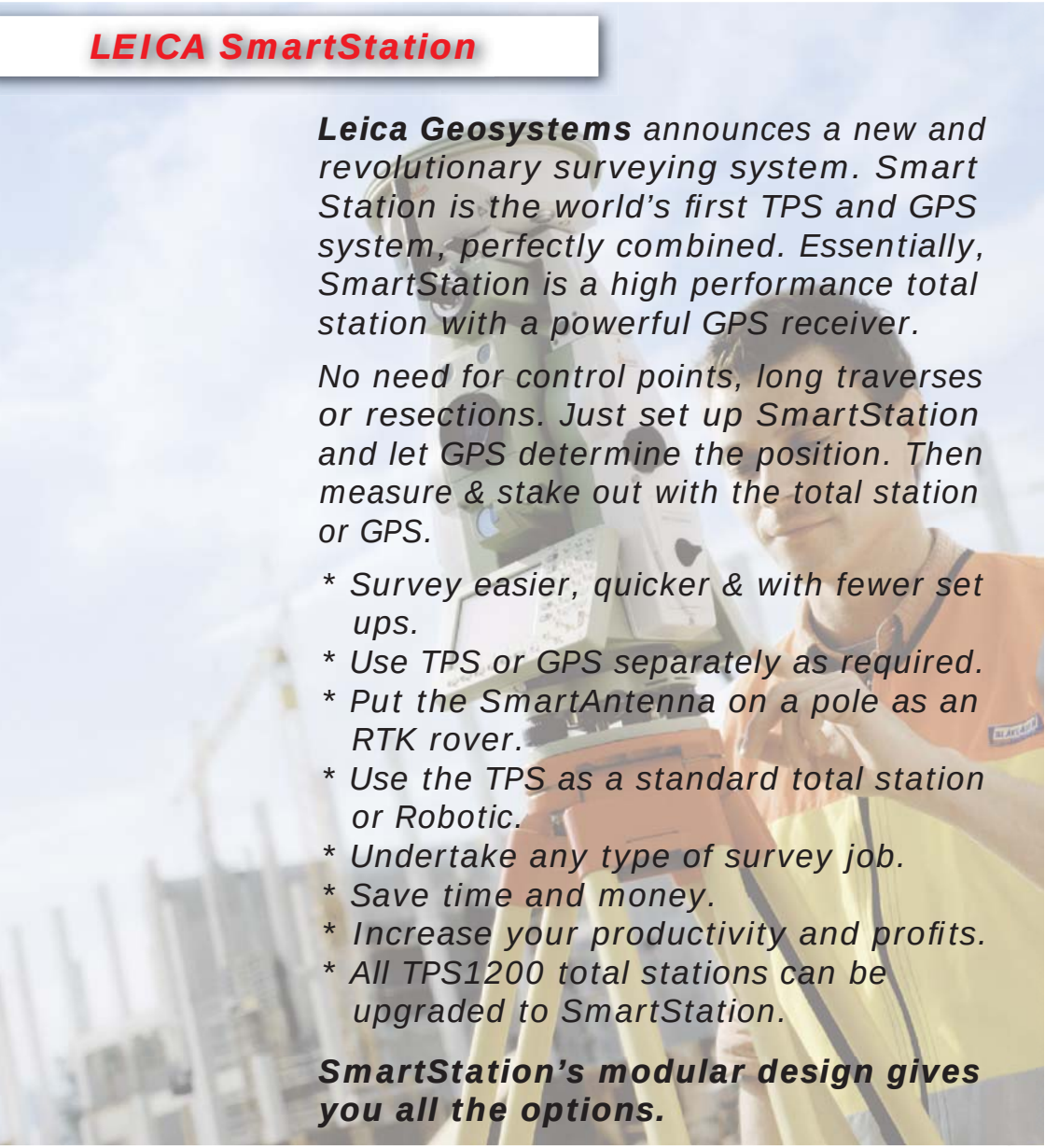
LEICA 800 Performance Series Total Station

Angular acc.	2 sec, 3 sec or 5 sec
Measuring acc.	2mm + 2ppm
Range	3.5km. 170m no prism
Memory	8000 + points. RS232 interface
Magnification	30 x
Plummet	Laser

Apha numeric keyboard as standard

PENTAX R300 Total Station

Angular acc.	2,3,5 or 6 sec.
Range	1.5 - 4km.
Plummet	In Base laser.
Measuring acc.	5mm + 3ppm.
Reflectorless	Up to 200m.
Magnification	30x.
Auto focus	Yes.
Visible laser dot	Yes.
Memory	20,000 points.



LEICA SmartStation

Leica Geosystems *announces a new and revolutionary surveying system. Smart Station is the world's first TPS and GPS system, perfectly combined. Essentially, SmartStation is a high performance total station with a powerful GPS receiver.*

No need for control points, long traverses or resections. Just set up SmartStation and let GPS determine the position. Then measure & stake out with the total station or GPS.

* *Survey easier, quicker & with fewer set ups.*
* *Use TPS or GPS separately as required.*
* *Put the SmartAntenna on a pole as an RTK rover.*
* *Use the TPS as a standard total station or Robotic.*
* *Undertake any type of survey job.*
* *Save time and money.*
* *Increase your productivity and profits.*
* *All TPS1200 total stations can be upgraded to SmartStation.*

SmartStation's modular design gives you all the options.

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

SmartStation. Total Station

www.leica-geosystems.com

with integrated GPS.

Leica Geosystems

LEICA GPS

Leica GPS 1200

The Leica 1200 GPS system sets the world standard in GPS surveying. From its small size and light weight to its modular design, the System 1200 has been engineered for outstanding performance. Faster than ever, and providing efficient cost-effective single and dual frequency solutions for every possible application.

The modular concept of system 1200 allows you to set up the receiver wherever and however you want - on a tripod, or a pole, with a backpack, on a vehicle or a machine. It is extremely versatile & offers the flexibility users have come to expect from Leica Geosystems.

Leica GPS1200 Options

Leica system1200 receivers provide all the flexibility, power & performance needed for every type of GPS application.

GPS Receivers	GX1230	GX1220	GX1210	GRX1200 Pro Reference
GPS technology	SmartTrack	SmartTrack	SmartTrack	SmartTrack
Channels	12L1 +12L2	12L1 +12L2	12L1	12L1 + 12L2
RTK	Yes	No	No	Yes (transmit only)
DGPS	Yes	optional	optional	Yes (transmit only)
Status Indicators	3 LED indicators: for Power, tracking, memory			
Ports	1 power, 3 serial, 1 controller & 1 antenna port			+1power , 1 ethernet
Voltage	12V			
Event input & PPS	Optional	Optional	Optional	Standard
Standard Antenna	AX1202	AX1202	AX1201	AT504 / AX1202

Leica Geo Office (LGO) Desktop software

Everything you need in a single software package for GPS and TPS: imports, visualization, conversion, quality control, processing, adjustment, reporting and export.

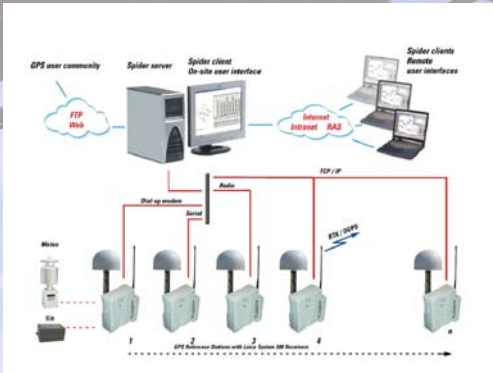
C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

Leica Geosystems SPIDER GPS Reference Station Software

Spider is a new, advanced, affordable software for controlling and operating GPS reference stations and networks.

Spider can control single reference stations providing GPS data to local areas as well as complete networks of stations supplying GPS services over entire regions, states and even countries.

Once started, a Spider reference station network runs continuously and automatically.



Leica GIS Receivers : GS20 & GS5+

The GS20 PDM - Professional Data Mapper combines the accuracy and capabilities of a professional-grade GIS data collection system with the ease-of-use of a recreational GPS unit.

GS-20

GS5+ Antenna

Leica GS5+ Integrated Antenna

With integrated high accuracy Leica GPS/GIS data acquisition antenna there is no need for separate differential units, external antennas, splitters and excessive wiring. This system connects to almost all PDA's and data loggers via an NMEA output string.

Leica SR20 Single frequency survey receiver

The Leica SR20 GPS receiver is an easy to use single frequency survey grade device. The SR20 also offers the added benefit of supporting all forms of static & kinematic surveys.

LISCAD

SURVEYING & ENGINEERING SOFTWARE

THE SURVEYOR'S CHOICE

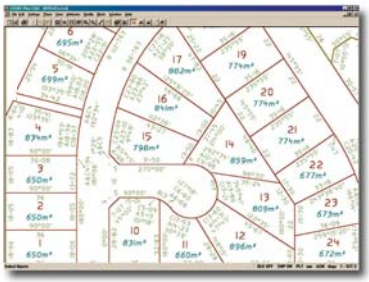
Join the 1000s of Surveyors who rely on LISCAD™

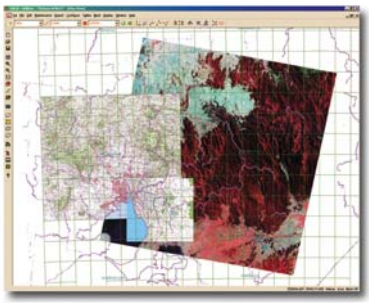
- Easy to Learn & Use
- Comprehensive & Flexible
- Fast, Effective Service & Support

LISCAD's flexibility allows you to tailor its field coding system to adapt to your procedures and to perform reductions, adjustments and computations rigorously in relation to the geodetic projection selected.

You can also form huge digital terrain models, perform 2D / 3D transformations, transfer data between other systems, compute volumes from end areas or digital terrain models as well as configure LISCAD to your personal preferences for units, colours, symbols, line styles, toolbars, feature display, reports and field coding.

LISCAD's intelligent design features will give you the capabilities you require whether you are building a dam, re-sheeting a road or designing an eight lane freeway.





Introducing LISCAD 7

Now Supporting:

- ✓ Undo / Redo
- ✓ Leica System 1200, SmartStation & RoadRunner
- ✓ XML & LandXML
- ✓ Customised HTML or ASCII reports & formats
- ✓ AutoCAD 2004 / 2005
- ✓ Exchange of alignment & profile designs
- ✓ MGA Grid File (NTv2) transformations
- ✓ Transformations between any projections
- ✓ Georeferenced MrSID, ECW & GeoTIFF
- ✓ Local & projection data in same project

Microsoft CERTIFIED Partner

LISCAD™ SURVEYING & ENGINEERING SOFTWARE

www.liscad.com

C.R. KENNEDY TOTAL SURVEYING SOLUTIONS

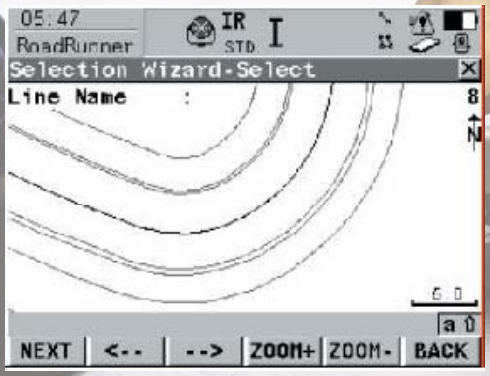
Leica Geosystems RoadRunner

RoadRunner is the completely new alignment stakeout application program for System 1200 – the same program and functionality is available for both **GPS1200** and **TPS1200**.

If you are in anyway involved in the staking out or checking of alignments – roads, railways, pipes or any other alignments – then you should definitely take a close look at RoadRunner – you will be amazed at what it can do.

As RoadRunner is a stringline based application it has no problems dealing with tight curves and other situations "cross-section based software" cannot handle.

The image below shows how an alignment would appear on-board the RoadRunner application.



Flexibility: Work the way you want.

RoadRunner offers total flexibility which allows you to customise it to the way you work. **Configurable Info** pages and **Logfiles** mean that you see only the information that you need to see.

Configurable slope stake methods, checks and guidance mean that you stakeout the way you want to stakeout.

Graphical stakeout

With the power and flexibility of a graphical stake page stakeout is quicker and easier with RoadRunner. As with the System 1200 Stakeout application program, the graphics and orientation methods of staking out can be configured for both the GPS and TPS instruments.

The RoadRunner software package allows complete flexibility when either staking out, viewing data or recording results.

Leica System 1200 TPS

LEICA ACCESSORIES

GEB111 or GEB121

for 1100 Series TPS or 500 series GPS.

Retro targets 20/ 40 or 60MM

GKL211 Charger

LG734752

LG733271

GKL221 Pro charger

LG733258

C/ F adapter

LG733256

32 MB C/F card

ZNL Plummet LG406853

GEB211

LG733269

GEB221

LG733270

LG166637

GDZ2 Thermometer

GLS14 Mini pole

LG403427

E face & Barcode LG522794

2.15m GLS11 pole

LG385500

GEB171 Nimh battery

LG727367

C.R.KENNEDY TOTAL SURVEYING SOLUTIONS

GDF111 no o/plummet. LG667305
GZR4 360 degree prism-
LG639985
GRT144 Prism carrier
LG667313
GDF112 with o/p.LG667308
GPR111 - LG641618
Basic prism plastic
CRC Adaptor
LG726842
GDF121 no o/p. LG667304
GDF122 with o/p. LG667307
GPR121 - LG641617
Pro prism metal
SNLL121 Laser plummet
LG641762 Monitoring prism
Mini prism LG641663
Target LG362823
Prism LG362830
Holder LG362820
GPR1 assy
SNLL111 Laser Plummet
GMP111 Mini prism with poles LG641615

CST ACCESSORIES

531507

526057

532513

532515

Metal prism assy.
5/8 base

531010

Mini prism &
bag. 5/8 base

526052

Standard prism

531100

580654

Metal prism assy.
Leica base

541027

Mini prism &
bag. Leica base

526056

Illuminated prism

Leica style
prism

533024

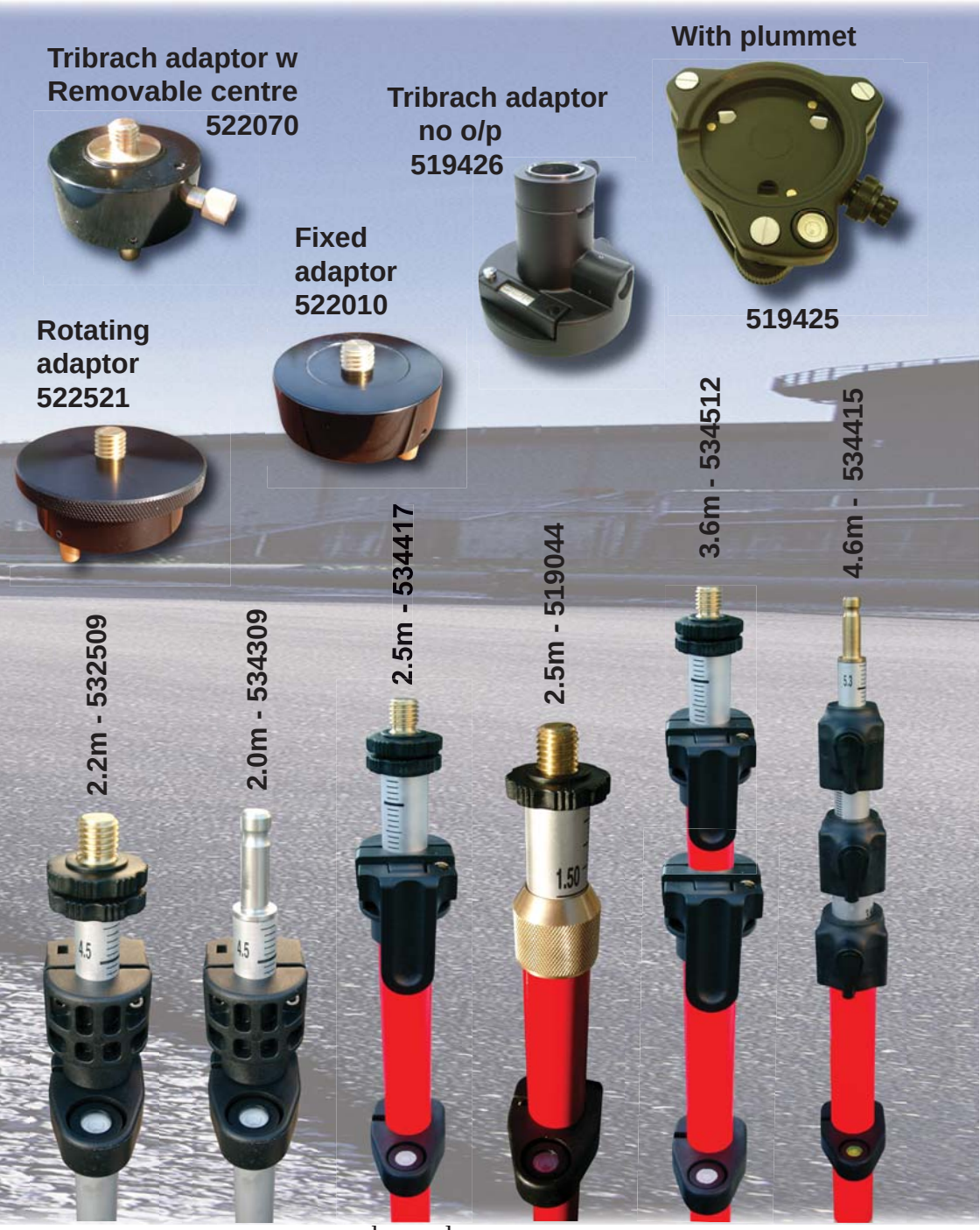
Plastic prism assy.
5/8 base

531200

Mini prism plastic.
5/8 base

526053

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS


Tribrach adaptor w
Removable centre
522070
Tribrach adaptor
no o/p
519426
With plummet
519425
Fixed
adaptor
522010
Rotating
adaptor
522521
2.2m - 532509
2.0m - 534309
2.5m - 534417
2.5m - 519044
3.6m - 534512
4.6m - 534415

MACHINE AUTOMATION

Leica MC1200 Control Panel.

Leica MC1200 Grader system. Universal Machine Control

Based on the all new CAN-Bus **Leica Geosystems** Technology, the MC1200 universal Machine Control System sets the new standard for Machine Control Systems. Modular, robust, fast and reliable – all the qualities you have come to expect from Leica Geosystems.

Works on Graders with ultrasonic and/or slope/ laser receiver mast/s.

Works on Pavers with ultrasonic, slope and laser receiver.

Works on Dozers with single/ dual masts for laser and/or slope.

The universal dual control panel is very user friendly & works on any machine.

* User friendly operator panel. * Universal machine capability. * Shock and vibration resistant. * Menu structure guides the operator through all system operations. * Integrated display lights show blade position & system status at a glance. * Dedicated function buttons – operators can develop a "feel" for the system so operation is second nature. * Optional "Multistick" fingertip controls keep the operator's hands safely on the control levers. * Uses Leica's unique patented ultrasonic triangulation for automatic blade sideshift operation. * Simplifies operator training. Minimises support & maintenance requirements. * Wide operating temperature range for open or enclosed cab. * Wide input voltage range compatible with all machine electrical systems.

PRO Control and CAB sensor Proportional sensor and panel systems 360° Laser Control

- Constant accuracy band control
- Ultra-bright LED display
- Rough/fine grade bandwidths
- Works with electronic mast systems
- Manual or fully automated systems
- 360° sensor. 100% waterproof

Depthmaster 200 – Sensor Machine Control Receiver

- Constant Accuracy Band Control
- Magnetic or bracket mounted
- Patented plumb indicators
- Ultra-bright LED displays (front & back)
- Self-contained rechargeable battery.
- 100% waterproof

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

www.crkennedy.com.au

Leica Geosystems

Concrete

Grading

Asphalt

SAVE TIME AND MONEY... INTRICATE MACHINE CONTROL AT THE TOUCH OF A BUTTON.

Save time and work more efficiently with the automatic Leica 3D Machine Guidance System - GradeStar for graders and dozers, LMGS-P for road trimmers, profilers and asphalt pavers, and LMGS-S for concrete pavers. Complex designs are quickly and precisely achieved according to your exact project data.

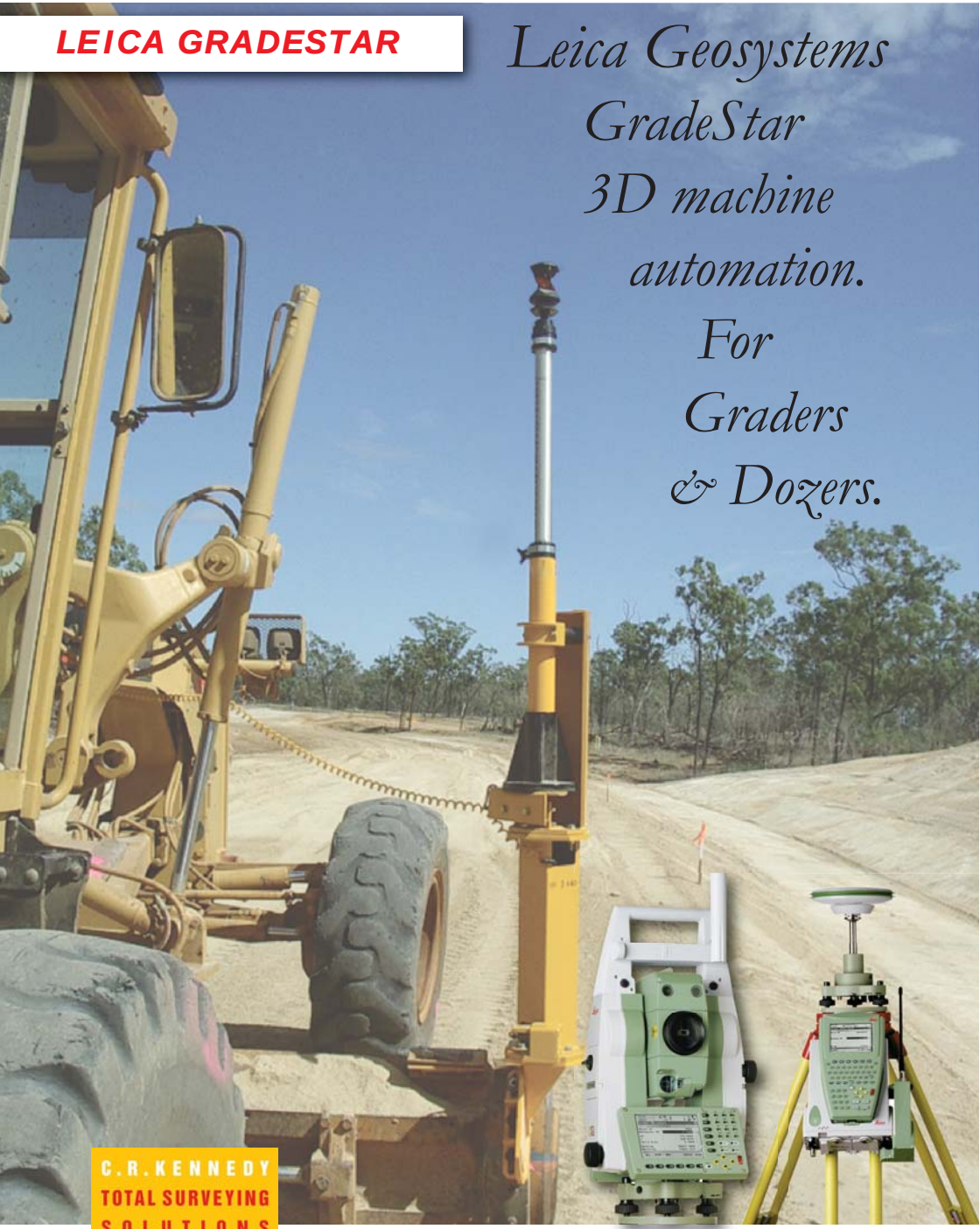
Leica Geosystems 3D system controls your machine with your choice of either a high precision Leica Total Station or GPS system - these instruments are also suitable for all typical survey tasks.

These 3D systems maximise your machines productivity and dramatically reduce earth moving costs. The total station system enables high grading accuracy, with +/- 5mm in height and +/- 10mm for position, easily achieved. For lower accuracy requirements GPS based systems are available.

. Leica's GradeStar system can easily be retro fitted to most common machines.
. Increased productivity, materials saving and improved quality of the finished project.
. Possible to work with half the blade beyond the edge of the project.
. Automatic detection of u-turns.
. Minimum training required.
. Easy to use display interface.

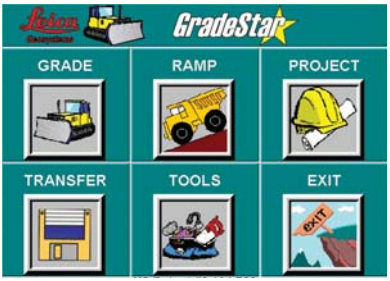
360 degree Precision Prism

Automatic Total Station


LEICA GRADESTAR
Leica Geosystems
GradeStar
3D machine
automation.
For
Graders
& Dozers.
C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

Leica GradeStar for grader or dozer is a 3D machine automation system. GradeStar uses either TPS or GPS measurements to track the position of the machines on the earth's surface. This actual position is then compared to the engineers design profile of the new surface. The new surface can be defined by either triangulations (DTM or TIN) or electronic stringlines.

GradeStar computes the difference between the actual and design position, and reports the cut/ fill value to the machine operator. The machine can then be manually or automatically guided to the design surface.



The GradeStar system completes the Leica Geosystem's solution in the fine grading field and provides full flexibility for the operator. It is compatible with older versions but is now based on embedded Windows XP technology.

The operator can easily switch from either a GPS or TPS based system as it is all based off a single mast solution.

Like the former version it utilises Laser Alignment's very popular 2D machine control systems. All Sonicmaster and ProControl systems in the market can be easily upgraded to 3-D functionality and still be used as a conventional sonic or laser based system.

This is a unique benefit for our customers, through a combination of our high-end GPS and TPS technology we can offer the best solution in the market.

LEICA MC200 Digger

LEICA MC200 Excavator System

- Utilising robust and futureproof CANBus technology.
- The 500g shock-resistant sensors can additionally be used with a rock breaker attachment.
- Displays real-time digging for depth reading & target indication.
- Dial-in or “Learn & Dig” any slope or gradient.
- Alarm setting for maximum height or depth.
- Laser catcher keeps depth to an absolute reference.
- Real-time bucket rotation display.
- Up to 9 different bucket sizes and attachments supported.
- Metric or Imperial units displayed.
- Accurate to centimetres!
- **Able to record tarr weights!**
- **GPS compatible!**

Dig your way to greater profitability!

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

www.leica-geosystems.com

MIKROFYN MIKRODIGGER

MIKROFYN

Mikrofyn Mikrodigger System

- Easy to use, one button control.
- Bucket position indicator eliminates costly graphical display.
- 4 extra inputs for zero up/down etc, placed on operating levers.
- Very bright LED display for height.
- The quick reacting display settles in less than 1 sec.
- May be fitted with 2 to 5 sensors.
- May be fitted with rotational sensor.
- Quick change possible between 20 different bucket settings, stored by name.
- Slopes displayed as %, deg, gon, or 1:XXX.
- The moveble display is generally mounted in the cabin.
- High power beeper, muteable.
- Very rugged and 100% waterproof

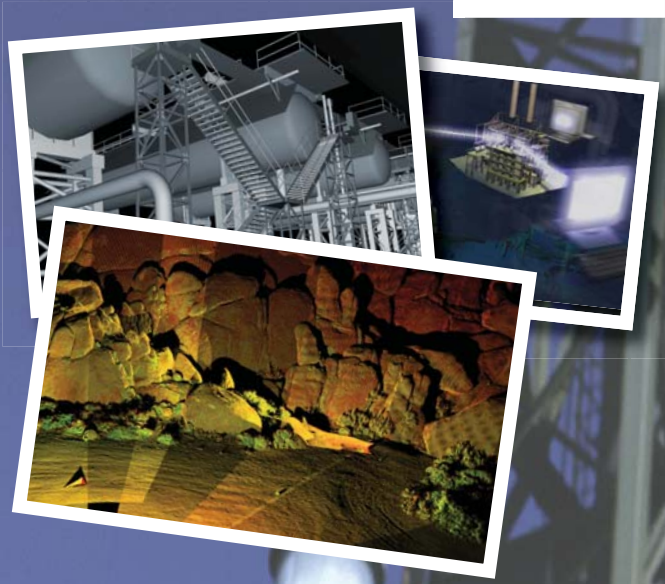
Mikrodigger display and sensors

MIKRODIGGER

Three inclination sensors, used for measuring the angle of the boom, stick, and bucket, feed information to the Main Display Unit, the XC-1, which makes the calculations. The operator just establishes a known reference point, sets the desired depth and slope, then chooses FIXED DEPTH or SLOPE mode and starts digging. The Main Display Unit indicates the actual depth via a bright LED numerical display and the operator is able to determine HIGH, ON GRADE or LOW with the aid of three lights or an audible alarm.

Mikrodigger. At work all over the world!

High-Definition Surveying



HIGH-DEFINITION SURVEYING HDS

The new HDS series from Leica Geosystems represents the next generation of 3D laser scanners. Accurate spatial datasets “point clouds” are quickly and easily captured, resulting in a valuable 3D representation of the required scene on your PC. Take simple dimensions or create traditional survey deliverables. The HDS series are the ideal tool for capturing accurate dimensional information of complex structures or areas that are difficult to survey.

CYCLONE SOFTWARE

Cyclone is an award-winning 3D point cloud modeling software designed to allow multiple users to work on the same point cloud at the same time. The software is ideally suited for the creation of complex 3D models of processing plants and complicated structures. Digital Terrain Model’s, Contours, Volumes and Surface Areas can also be generated from Cyclone Software.

C.R. KENNEDY
TOTAL SURVEYING
SOLUTIONS

Riegl Scanning system

Riegl Laser Scanner, the ideal choice for rapid acquisition of high quality 3D data.

Riegl LMS-Z420

- Riegl LMS-Z420 Laser Scanner offers a unique combination of fast acquisition, long range and high accuracy, resulting in a 360 degree panoramic colour image.
- Range up to 800m, accuracy of up to 10mm.
- Integration of Photogrammetry and Laser Scanning.
- Easily fly through the 3D data and measure distances, surface area, volumes and much more.
- Survey mines, tunnels & complex structures easily and safely.
- The Riegl Scanner works with standard Windows PC or notebook.

Riegl LMS- Z420i Laser Scanner

Cavity Monitoring System

Optech's Cavity Monitoring System is a 21st century solution for measuring the dimensions of voids and cavities in underground mines. CMS can be inserted through boreholes as narrow as 25 cm (10 inches) to a depth of 38 m (125 feet), and is operated remotely via the wireless handheld computer, ensuring operator safety when scanning dangerous areas.

APPLICATIONS

- Monitoring backfill placement
- Quantifying and minimizing dilution
- Accurate sloughing/caving measurement of walls and backs of the cavity
- Monitoring blast efficiency and extent of rockburst damage

- Easy to learn, transport and set up
- Calculates sections, areas and complete volumes automatically
- Outputs multiple DXF sections that can be imported into CAD systems or mining packages
- Cuts through the 3D mesh of a cavity, quickly and at any orientation

Optech

C.R. KENNEDY
TOTAL SURVEYING
SOLUTIONS

www.optech.ca

Leica TMS Profile

TMS Profile consists of two components: **TMS Office/ProFit** (for PC) and **TMS ProScan** (for total station).

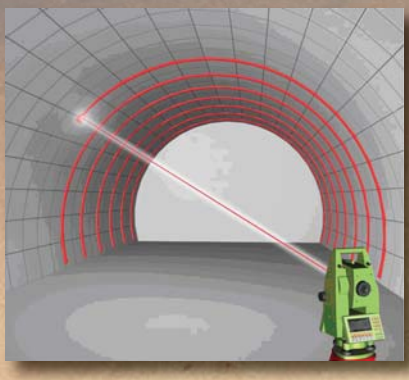
TMS Office manages tunnel geometry such as horizontal & vertical alignments, design profiles and control stations. This information can be loaded onto a Leica TPS1100 or TPS1200 reflectorless motorised instrument eg. TCRM, TCRA or TCRP.

TMS Proscan application runs on board TPS1100 or TPS1200 & allows automatic measurements of either vertical or horizontal profiles in tunnels or shafts. Once an initial profile is measured, parallel profiles can be measured from the same station.

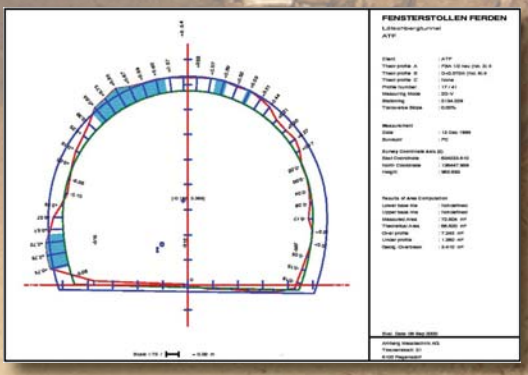
Direct evaluation compares tunnel design to actual measurements on the spot. The instrument turns to areas of over or under break and marks it with a red laser spot for marking up and correction.

Measured profiles can be loaded into **ProFit** for further evaluation & producion of graphical and tabular reports such as - work as executed reports, clearance profiles for rail tunnels, shotcrete thickness and volume computations.

TMS ProScan in action



Leica total station used



LEICA DISTO

Leica Disto™ Classic 5a

LG740693

Leica™ Disto Plus

LG736874

Leica Disto™ Special 5

LG744473

Leica Disto™ Lite

LG729529

Leica Disto™ viewer

DISTO™ stands for fast, accurate and reliable distance measuring inside or outside.

DISTO™ is the first hand held laser metre in the world that measures indoors and outdoors to up to 200 metres, in ideal circumstances, with a precision of +/- 1.5mm; Lite 5 is +/- 3mm.

Whilst all three DISTO™ models offer such features as area, volume, built in bubble and measurement from the front or back of the unit, the Classic also has a number of additional benefits. These include a built in view finder for outdoor use, pythagorean functions, a 1/4 inch tripod mounting point, tapered base, 15 point memory and a 10 point memory for presets.

With numerous accessories and a modern design, DISTO™ is available in three model configurations for use in a variety of situations and trades.

C.R.KENNEDY TOTAL SURVEYING SOLUTIONS

The Leica DISTO™ plus is the only device in the world that offers the highest accuracy, attractive design and wireless data transfer by means of BLUETOOTH technology.

Even if you are currently still working with pen and paper, the integrated Leica Disto™ technology allows you to make the change at any time. Utilising some PC device this allows you the ability to record measured values electronically in the field as you work.

Utilising the free Disto software which is provided with the Plus, you can draft in the field or save to Excel on a HP Ipac.

Hp iPAC

The DLSA Disto™ Laser Distance Measuring modules are powerful and easy to integrate distance measuring devices designed to meet the demands of the industrial measurement market. The new DLSA models offer increased measuring performance over the hand held Disto™ with the added benefit of a strong metal body, multi point mounting system as well as a variety of cable communication options.

Used in situations where the Disto™ needs to be permanently, or semi permanently, mounted to measure to a fixed target. The DLSA Disto™, unlike a hand held Disto™, is both powered and controlled remotely from a PC or other computer device. Utilising a variety of readily available software, the DLSA Disto™ can be made to measure and send this info back to the pc, at set intervals over a defined period (eg, take a measurement every 5 seconds for the next 24 hours) or be made to measure on command, or continuously in tracking mode.

DLSA unit

LEICA GRP3000 rail survey system

GRP3000 - A lightweight Rail Trolley System which allows measurement and recording of railway geometry. It can be carried and operated by one person and is available for all rail gauges.

GRP3000 accurately measures and records gauge, superelevation and metreage with the press of a button.

In addition, GRP3000 uses an accurate reflectorless servo distance meter to take automated profiles or single measurements for detail surveys which are recorded onto a ruggedised portable computer.

A various of reports can also be generated for graphical outputs of profiles.

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

Rail Alignment system

The GRP Rail survey system can be used in two modes:

Relative Mode: allows automatic recording of measurements in tunnels, cuttings, underneath bridges or details along open track in relation to track alignment. These measurements can be compared to a design for clearance measurements.

Absolute Mode: The addition of a Leica automated total station (System1000,1100 or 1200) with radio link enables measurement of true track geometry and coordinates of profile points.

This system can be used for construction of slab-tracks and export of data to tamping machines.

Leica total station.

Ruggedised PC control unit.

Variable guages.

Lightweight system - 25 kg.

Leica GRP 3000

Electrically isolated rollers.

LEICA LASER LEVELS

RUGBY - 100. General use laser level.

- 300m working diameter.
- Self levelling range ± 3°.
- Manual mode for matching control points and grades up to 10%.
- Accuracy of +/- 2.3mm per 30m.
- Uses alkaline batteries or rechargeable battery pack.
- Water resistance water-tight to IPX-6 standard.
- Variable rotation speed.
- Class 2 laser.
- With height alert.

RUGBY 100LR. Long Range laser level.

- Automatic horizontal self-leveling.
- 2,300 feet (750 m) working diametre with sensor.
- Accuracy of +/-1.5 mm per 30 m.
- Manual with cross-axis self-levelling up to 10%.
- H.I. (elevation) alert: automatic and separate switch.
- 2 head speeds: 5 and 10 RPS.
- Housing made from co-molded rubber and high-impact plastic.
- Waterproof and dustproof to work reliably in all weather and jobsite conditions.

RUGBY 200. Horizontal & vertical laser level.

- Automatic horizontal & vertical levelling.
- 1,000 feet (300m) working diametre with sensor.
- Accuracy of +/-1.5 mm per 30 m.
- Plumb beam for 90 degree layout work.
- Plumb down feature.
- H.I. (elevation) alert: automatic and separate switch.
- Four head speeds: 0, 1, 2, 5, 10 RPS.
- Housing made of molded rubber and high-impact plastic.
- Waterproof & dustproof.
- Remote control also shown.

LG731558

LG733621

LG734153

C.R. KENNEDY TOTAL SURVEYING SOLUTIONS

Leica Geosystems

RUGBY 300. Horizontal automatic single grade.

- Stainless steel ball bearing pendulum.
- Automatic single grade, + 25% or -5%.
- Greater than 750m working diametre.
- 12 arc second accuracy at level, +/- 1.2mm @ 30m.
- Auto shut-off if knocked off grade.
- Large, easy to read LCD display.
- Uses alkaline or rechargeable battery pack.
- Optional scope.
- 100% waterproof.

RUGBY 400. Horizontal automatic dual grade.

- Stainless steel ball bearing pendulum.
- Automatic dual grade, +25% or _5%.
- Greater than 750m working diametre.
- 12 arc second accuracy at level, +/- 1.2mm @ 30m.
- Auto shut-off if knocked off grade.
- Large, easy to read LCD display.
- Uses alkaline or rechargeable battery pack.
- Optional scope.
- 100% waterproof.
- Remote control also shown.

Rod-Eye Mini Sensor

Rod-Eye Classic Sensor

Rod-Eye Pro Sensor

LG725870

LG726116

Pipe Lasers

Red or Green beam.

MIKROFYN LASER LEVELS

- 0 to ± 10% Grade adjustment range in both axes.
- Grade can be reversed.
- Self calibrating.
- Levelling in horizontal. Optional vertical model also available.
- ± 10° Automatic levelling range.
- ± 10° Lateral adjustment left right.
- Can be controlled remotely by IR.
- Diode Laser 780 nm.
- LCD display.

Complete with: Case, hand held detector, battery and charger.

ML-4

- 0 to + 10% Grade adjustment range in one axis.
- Self calibrating.
- ±10° Automatic levelling range.
- Diode Laser 780 nm.
- Led Display.

Complete with: Case, hand held detector, battery and charger.

ML-3

- Levelling in both horizontal and vertical planes.
- 10° Automatic levelling range.
- ±10° Lateral adjustment left/ right.
- Diode Laser 780 nm.

Complete with: Case, hand held detector, battery and charger.

ML-2

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

ML10 - 14 now enjoy a three year warranty!!

MIKROFYN

- Self levelling vert & horiz.
- Plumb up / right angle.
- Dual dial in grade to 10%.
- +/- 1.5mm @ 30 metres.
- Visible beam.
- 150 m radius.
- scan mode.
- with wall bracket.
- "Makita type" batt system.
- 1 hour charge/ 30 hours life.

ML-14

- Self levelling vert & horiz.
- Plumb up / right angle.
- Dual dial in grade to 10%.
- +/- 1.5mm @ 30 metres.
- Visible beam.
- "Makita type" batt system.
- 1 hour charge/ 30 hours life.

ML-13

- Self levelling horizontal.
- Single grade to 10%.
- +/- 1.5mm @ 30 metres.
- 150 m radius.
- "Makita type" battery.
- 1 hour charge/ 30 hours battery life.

ML-11

ML-10

- Self levelling horizontal.
- +/- 1.5mm @ 30 metres.
- 150 m radius.
- "Makita type" battery.
- 1 hour charge/ 30 hours of battery life.

MLP-120C Pipe Laser

• Conventional Diode Laser 635nm. • Beam diameter 10mm. • Power output up to 4mW. • Laser beam with circular cross section that maintains for a distance of more than 100m. • Grade adjustment range +50% to -15%. • Automatic levelling range +45% to -20%. • Cross axis ±10%. • Automatic cross axis compensation ±10%. • Self calibrating. • High intensity LED display, viewable from a distance of several meters. • IR Remote controlled. Complete with: Case, remote controller, battery and charger (1 hr recharge).

ROBOTOOLZ

519757

519805

RT7600-5 (519757)

* Quick & easy, gravity self levelling.
* 5 laser beams/ dots produced.
* 3 horizontal dots, one up/ one down.
* Excellent for levelling points, plumbing up or for defining a right angle.
* Accuracy of +/- 6 mm @ 30m.
* Pendulum lock to maintain accuracy during transit. Don't be without one!

RT7510-3 (519805)

* As above, with 3 laser beams rather than 5.
* Plumb up, plumb down and one horizontal

5/8 or 1/4 " mount

519775

519808

RT5250-1 (519775)

* Horizontal laser plane auto levelling, accuracy +/- 3mm @ 30m, and manual vertical laser plane levelling.
* 100m radius with receiver, (staff bracket also included).
* Several use modes available including laser dot mode, constant line mode or dither/scan mode.

RT5250-xp (519808)

* As above, with extra bright beam & plumb up beam, or right angle.

519770

519780

"Dual Head" RT7690-2

* Quick and easy gravity self levelling for both horizontal & vertical laser planes.
* Comes with a receiver/ remote control & staff bracket.
* 100 m radius with receiver.
* Accuracy of +/- 3 mm @ 30m.
* Wall bracket available for inside use.
* The laser level for almost all levelling jobs!

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

RT7610

* 5 beam, electronic self levelling.
* 3 laser dots produced horizontally, also with one beam up and one down.
* Great for levelling points, plumbing up or for setting a right angle.
* Also includes an out of level indicator.

519761

RT7615-2

* Automatic levelling, two laser beam cross liner.
* Gravity pendulum levelling system used for quick set up time.
* Graduated 360 degree base with locks at 90 degree increments allow angular layout.
* Out of level indicator helps eliminate errors.

519779

RT7210-1

* The original Robotoolz laser level, this model offers automatic horizontal levelling.
* Through the use of the remote control, either one horizontal dot, or a series of dots, can be moved remotely around the room to establish level.
* Ceiling levelling was never this easy.

519807

RT3620-2

* The RT3620 is a manual levelling laser level providing plumb up, as well as horizontal and vertical laser planes.
* The plumb beam also provides a right angle when used in vertical mode.
* Also with dot and dither modes, the 3620 includes a receiver & bracket.

519777

RT1250 4m pole. 519809

LEVELS

LEICA NA2

- Accuracy potential 0.7mm.
- 0.3mm with parallel plate micrometer.
- 32 x magnification.
- 1.6m shortest focus range.
- 0.3 second compensator accuracy.

Leica Sprinter Digital levels

- Models - Sprinter 100 & 100m, Sprinter 200 & 200m.
- Accuracy 2.0mm (100), accuracy 1.5mm (200).
- Internal memory of 500 points for M models.
- Measuring modes - tracking & single.
- Measuring time of 3 seconds.
- Range to Standard staff 2m to 80m.
- GSI format via RS232 (M versions only)
- Utilises 4 x AA batteries. Nicad batteries available.
- Dust/ water resistant to IP55 standard.
- Weight of less than 2.5 kg.

Leica DNA03 & DNA10 Digital levels

- Programs - Measure & Record, staff height/distance
- Accuracy to 1.5mm (0.9mm with invar) - DNA10
- Accuracy to 1mm (0.3mm with invar) - DNA3
- Staff reading resolution 0.01mm for DNA3
- Staff reading resolution 0.1mm for DNA10
- Range to Standard staff 1.8m to 110m
- Range to Invar staff 1.8m to 60m
- Utilises GEB111 / GEB121 batts
- 6000 points internal memory
- Utilises PCMCIA card
- 24x magnification

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

www.leica-geosystems.com

LEICA NA series levels

LG641982 - 20 x mag. NA720.
LG641983 - 24 x mag. NA724.
LG641984 - 28 x mag. NA728.
LG641985 - 30 x mag. NA730.

LEICA Runner level

LG727586 - 24 x mag.

PENTAX AP auto level

519216 - AP120, 20 x mag.
519218 - AP124, 24 x mag.
519217 - AP128, 28 x mag.

SOLUTION LEVELS

519212 - 20 x magnification
519213 - 32 x magnification

TRIPODS

519043

- Wood / fiberglass composite
- Flat top
- H/d

519027

- RA domed top
- Aluminium
- Economy

519026

- RA flat top
- Aluminium
- Economy

GST 05L

LG563630

- Leica
- Aluminium
- Flat top
- H/d

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

519032

- Wooden
- Flat top
- H/D

519046

- RA tripod
- Aluminium
- Elevating.

519033

- Pentax
- Aluminium
- Flat head
- L/d

GST120-9

LG667301

- Leica
- Wooden
- Flat top
- Self locking
- H/d

GST20-9

LG394752

- Leica
- Flat top
- Wooden
- H/d

LEICA DIGICAT

Leica Geosystems

DIGICAT 100 & 200 services locator

- *Used for detection and localisation of underground services, including cables, metallic pipes and connected equipment.*
- *To a depth of 3m.*
- *Visual and audio indicators.*
- *40 hour battery life.*
- *under 4kg in weight.*
- *Leica Geosystems quality.*

DIGICAT 200
- As per Digicat 100 with an additional depth indication to pipes.

Leica Digicat

DIGITRACE 30/50/80
Feed the DIGITRACE up any material pipe, with the Digitex 8/33 connected, to enable very accurate tracing of non-metallic pipes.

DIGITEX 8/33
Create a unique signal with the DIGITEX 8/33 for the Digicat to follow - the 8/33 is connected to the Digitrace or to a pipe via alligator clips.This combination offers highly accurate results.

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

Your ideal partner for safe, fast & easy location of underground services

www.leica-geosystems.com

PENTAX BINOCULARS

PENTAX®

UCF Series:

Pentax original dual-axis eye-distance adjustment system
High-grade BaK4 glass prisms
Encased in protective rubber housing
UCF 10X24G. UCF 16X24 G.

Pentax FB Series:

The smallest and lightest binoculars in the range. Ultra compact and fashionably designed housing.
Perfect for the theater, sports and everyday use.

Pentax Papilio

Named from the Latin word for butterfly
High-refraction BaK4 glass prisms
Super minimum focusing distance of 1.6 feet
Long 15 mm eye relief, & protective rubber housing
Papilio 6.5X21. Papilio 8.5X21.

Pentax Jupiters:

Entry level binoculars
Compact, ergonomic body design
Short minimum focusing distance (of 3 m.)
8X20 MCF II. 10X20 MCF II.

Pentax. Make no mistake.

TAJIMA ACCESSORIES

6100055

5.0 m tape

6600080

Cutter knife

6600019

450 G magnetic plumb bob

6100052

7.0 m tape

6100056

G-lock 7.5m tape

Carry bag 519130

TR5000 Measuring wheel 6600010

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

Slant 100
Angle guage

6600060

30m Fiber glass - 6400030

50m Fiber glass
6400032

100m
Fiber glass
6400034

With end hook

10m Fiber glass pocket tape
6500003

6500007

20m Fiber glass pocket tape

10m Steel pocket tape
6300005

6300006

20m Steel pocket tape

30m Plastic
coated steel
6300031

With end hook

50m Plastic coated steel 6300032

100m Plastic rope

6600015

100m Steel tape

With
end
hook

6300037

GENERAL PRODUCTS

Scalemaster 2 Map measurer

7290459

Tamaya - Planix 10s Planimeter

08206964

Tamaya Planix 7 Planimeter

08206962

Tamaya Super Beta Planimeter

08206963

7090008

Tramex concrete Moisture Encounter

Tramex wood Encounter

Tramex Survey Encounter

7090007

Tramex Moisture Encounter

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

0 to 12m range 7090006

Rabone
Ultra sonic
measurer

HP 33s
Scientific Calculator
7310598

Sonin - Ultra sonic measurer

0 to 18m - 7090075

HP 48GII
graphing calculator
7310527

HP 49G+
Expandable RPN
graphing calculator
7310524

Bushnell Sport
- 5 to 800 yard
- 4 x mag
- +/- 1 yard accuracy

- 800 yard range
- 7 x mag.
- LED display
- Carry case
- 2 year warranty

Leica LRF 800 range finder

GENERAL PRODUCTS

Field bags
7090418

Field books

M10
Measuring
wheel
519090

7090426

Flagging tape 7090481

7090427

Paint 7090332

Gammon
reel l/d
526001

Top
580035

16 oz
plumb
bob
580010

Tip
580030

519098
Steel

519097
Plastic

Staff bubbles

C.R. KENNEDY
TOTAL SURVEYING
SOLUTIONS

Double optical sq.

519504

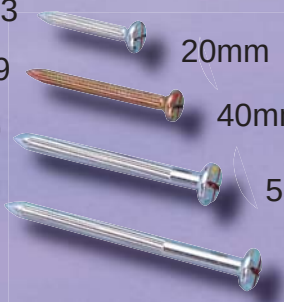
Single optical sq.

519503

CST Magna Trak

- **Ideal for ferous metal detection underground.**
- **Rio**
- **Survey pins**

7090723
7090719
7090720
7090722



20mm
40mm
55mm
80mm

8.0m tape
25mm wide

7230064

Poly Pegs Australia

Polypropolyne survey pegs.

Cadastral 75 x 75 x 450mm
NSW. QLD. WA. TAS.

Cadastral 75 x 75 x 350mm
Red: WA. White: QLD.

Cadastral 50 x 50 x 350mm
VIC. QLD. SA. WA. NT. TAS.

Engineering
50 x 50
x210mm
Set Out Peg
Standard

* Lot numbers can be stamped on each peg.
* Includes a centering point to accept a nail or metal tag.
* UV resistant.
* Heat resistant & non inflammable.
* Impervious to white ants.
* Designed to be easily driven into various soil types.
* Engineered to suit state specifications.
* Recyclable and available in a range of colours.

Colours: Green, Yellow, Orange.

GENERAL PRODUCTS

Digital angle measurer
450mm or 600mm
519611 shown.

Silva
clino-compass
7090278

Rubber cover
7090250

Sm360 compass
7090270

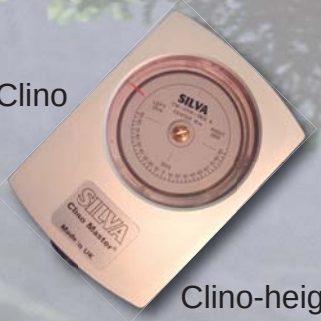
Smart tool 4 ft
519751

Smart tool 2 ft
519750

- Digital display with light
- 1/10 th degree accuracy
- Degrees, percent or inchs/feet
- Hold button for hard to read places
- Beep at 0 & 90 function

module 519752

CM 360 Clino
7090271



Clino-height
finder 7090249

Maruzen marker
7290550

Red & whites

7090151

Crayons
7090331

Model 80
compass 7090272

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

7091111
Tribrach
tester

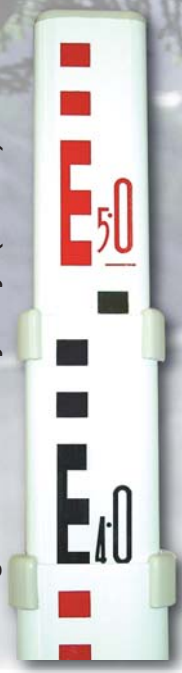
USBCF
card reader.
SDDR - 92.

519318
Pentax
Barbers
Pole

Thommen classic altimeter
7090274

53LD500
LD500
Machine
Receiver
(magnetic or bracket)

CST - ilm
Line generator
* Self levelling.
* High visibility laser lines.
* Horizontal & vertical.
* Various mounting options.
5112162



Fiberglass staff heavy/duty (shown) 7130050

Fiberglass staff light duty 7130053

523706
2m/ 2 piece range pole

3m & 5m 5mm metric staff

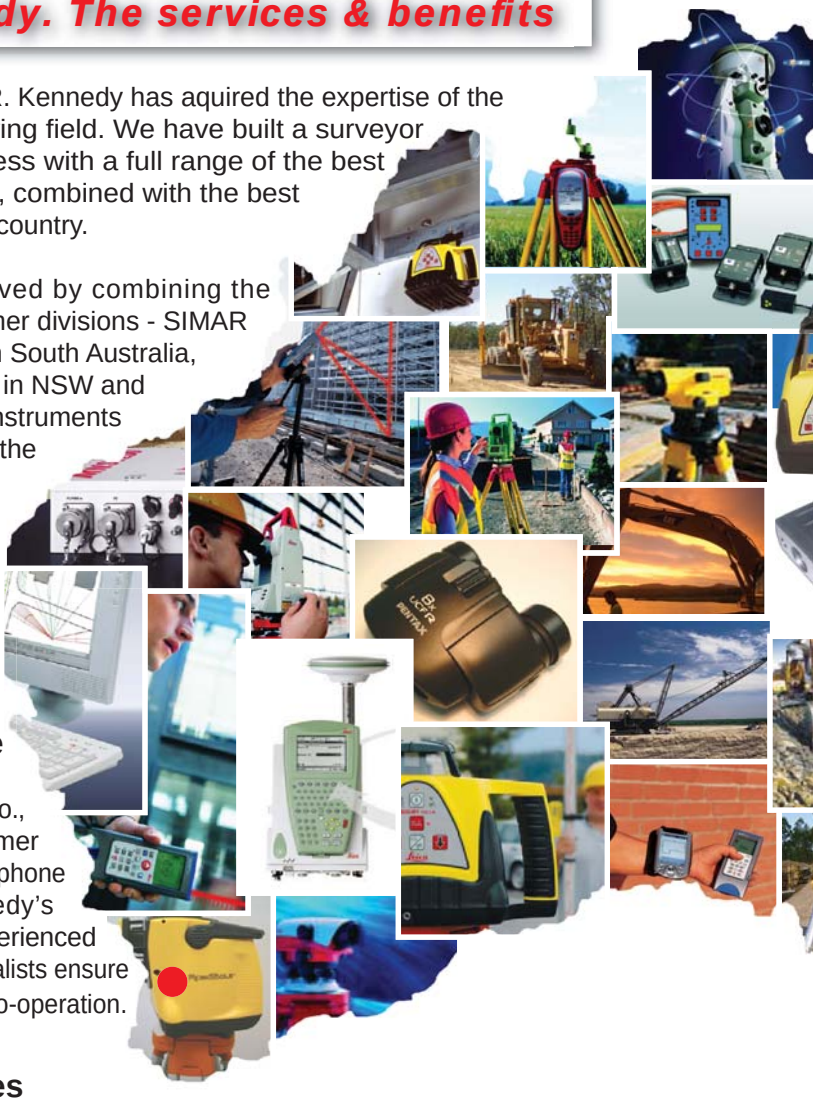
534400
1.8m/ 1 piece range pole

3m, 4m & 5m E face staff

CR Kennedy. The services & benefits

Over many years, C.R. Kennedy has aquired the expertise of the leaders in the surveying field. We have built a surveyor based service business with a full range of the best products in the world, combined with the best support people in the country.

This has been achieved by combining the experience of our former divisions - SIMAR in Victoria, INSUCO in South Australia, Precision Instruments in NSW and Precision Surveying Instruments in Queensland - with the skill and knowledge gained by Leica Geosystems and its employees in Australia.



Nation wide active assistance

With C.R. Kennedy & Co., comprehensive customer support is only a quick phone call away. C.R.Kennedy's highly trained and experienced survey systems specialists ensure pleasant and efficient co-operation.

Technical services

Our service centers are well able to provide fast turnaround times combined with reliable repairs.

- Technicians are trained regularly by expert factory instructors.
- Computer aided diagnostics locate problems fast.
- Warranty period on repairs.
- Software and hardware upgrades.
- Overhauls, yearly services, calibrations.
- On-site installations.

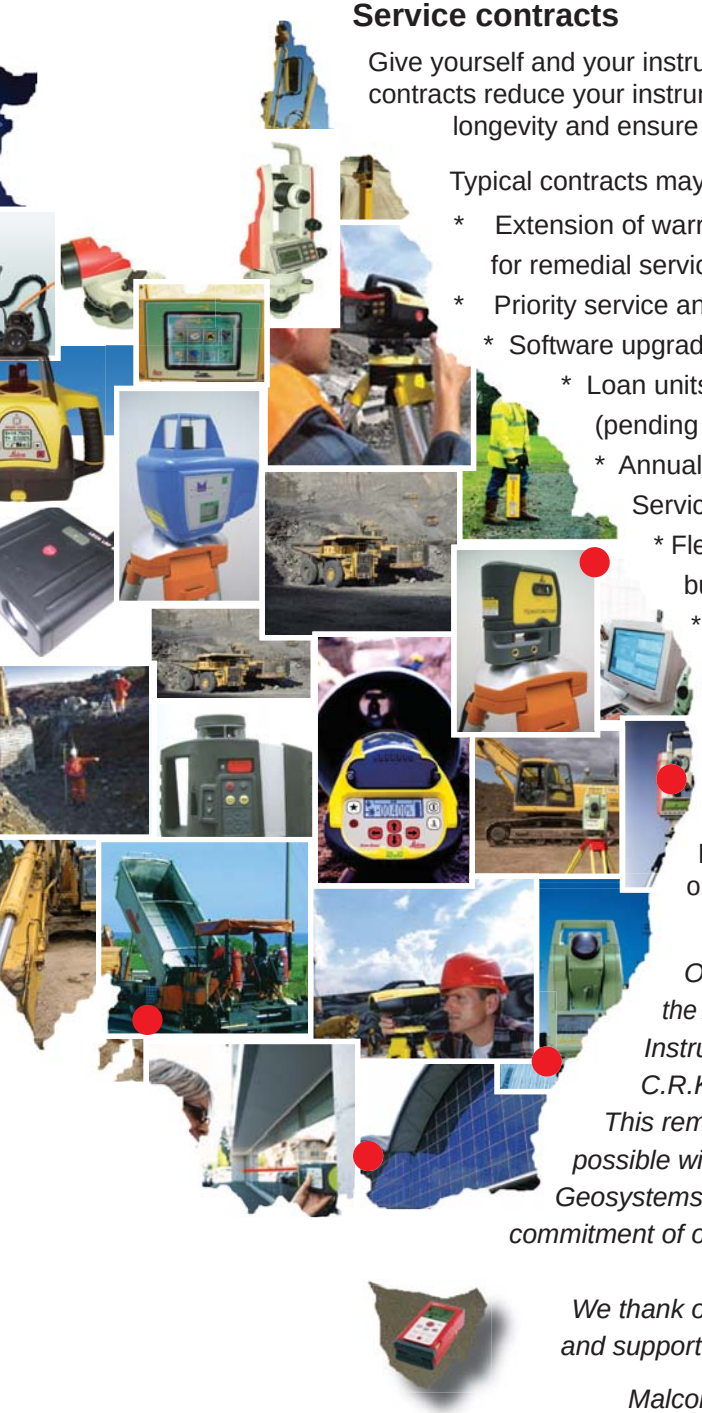
C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

Service contracts

Give yourself and your instrument special attention. Service contracts reduce your instrument costs, promote instrument longevity and ensure the best possible performance.

Typical contracts may include the following-

* Extension of warranty including parts and labour for remedial services.
* Priority service and repairs.
* Software upgrade free of charge.
* Loan units made available free of charge (pending availability).
* Annual service including test-protocol, Service Declaration.
* Flexible invoice periods to suit your business requirements.
* Fixed cost per annum, allowing easy budgeting of service costs.



The team...

The combination of sales and service groups from both C.R. Kennedy & Leica Geosystems has resulted in the formation of an organisation which is unparalleled in scale and ability to service.

One in every two dollars spent in the Australian Survey & Construction Instrumentation Market is spent with C.R.Kennedy and Company Pty Ltd. This remarkable achievement has been possible with the superior product of Leica Geosystems and the dedication, loyalty and commitment of our staff to providing the highest possible level of service.

We thank our customers for their business and support, which has made this possible.

Malcolm Kennedy. Managing Director

C.R.KENNEDY
TOTAL SURVEYING
SOLUTIONS

www.crkennedy.com.au

VICTORIA
663 Chapel St
South Yarra 3141
Tel: (03) 9823 1533
Fax: (03) 9827 7248
Email: vicsurvey@crkennedy.com.au

NEW SOUTH WALES
108 Miller St
Pyrmont 2009
Tel: (02) 9518 9700
Fax: (02) 9518 9711
Email: nswsurvey@crkennedy.com.au

QUEENSLAND
80 Kingsford Smith Drive
Albion 4010
Tel: (07) 3862 6210
Fax: (07) 3862 6212
Email: qldsurvey@crkennedy.com.au

QUEENSLAND
Mackay
Tel: (07) 4957 6733
Fax: (07) 4957 6755
Email: itruscott@crkennedy.com.au

SOUTH AUSTRALIA
261 Sturt Street
Adelaide 5000
Tel: (08) 8410 1366
Fax: (08) 8410 1370
Email: sasurvey@crkennedy.com.au

WESTERN AUSTRALIA
17-19 Oxford Close
West Leederville 6007
Tel: (08) 9489 8500
Fax: (08) 9489 8501
Email: wasurvey@crkennedy.com.au

This catalogue has been compiled and designed by Mark Hickey of CR Kennedy & Company Pty Ltd ABN 50 008 458 884. The majority of the digital images displayed have been taken using a Pentax Optio digital camera. Thanks to those manufacturers who provided assistance with images and to Samantha Wijaya for assistance with photography.